

# EUROPEAN PATENT OFFICE

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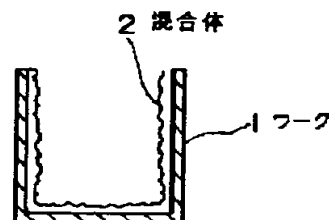
APPLICATION DATE : 09-09-93  
APPLICATION NUMBER : 05224579

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TITLE : METHOD FOR FORMING SILICON  
CARBIDE COATING ON CARBON  
FIBER/CARBON COMPOSITE  
MATERIAL



ABSTRACT : PURPOSE: To simply and surely cover the desired part of the carbon fiber/carbon composite material without requiring a complicated device by coating the surface of the carbon fibers/carbon composite material with the mixture of a specific binder with silicon powder and subsequently subjecting the coated product to a sintering treatment or a gaseous phase diffusion treatment.

CONSTITUTION: The inner periphery of a carbon fiber/carbon composite material work 1 molded into a cup-like shape having a prescribed depth is coated with the mixture 2 of silicon powder with a binder of a prescribed ratio giving an actual carbon ratio of  $\leq 10\%$  after its thermal decomposition, naturally dried, heated to 1700-2000°C at a heating rate of 200-600°C/h in an oven having the atmosphere of an inert gas such as argon, held at the prescribed temperature for a prescribed time (e.g. 30-60 min), and subsequently cooled to a prescribed temperature (e.g. 100°C) for finishing the Esintering treatment. The silicon carbide coating is thus formed by this method and, if necessary, a crack-sealing treatment, a silicon carbide gaseous phase diffusion treatment, a silicon carbide gaseous phase diffusion treatment or a silicon carbide CVD treatment is applied to provided the objective C/C composite material having a further enhanced quality.

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